

Responding to the Consequences of Climate Change

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Abstract:

The talk addresses the scientific consensus concerning climate change, and outlines the many paths that are open to mitigate climate change and its effects on human activities. Diverse aspects of the changing water cycle on Earth are used to illustrate the reality climate change. These include melting snowpack, glaciers, and sea ice; changes in runoff; rising sea level; moving ecosystems, and more. Human forcing of climate change is then explained, including: greenhouse gases, atmospheric aerosols, and changes in land use. Natural forcing effects are briefly discussed, including volcanoes and changes in the solar cycle. Returning to Earth's water cycle, the effects of climate-induced changes in water resources is presented. Examples include wildfires, floods and droughts, changes in the production and availability of food, and human social reactions to these effects. The talk then passes to a discussion of common human reactions to these forecasts of climate change effects, with a summary of recent research on the subject, plus several recent historical examples of large-scale changes in human behavior that affect the climate and ecosystems. Finally, in the face for needed action on climate, the many options for mitigation of climate change and adaptation to its effects are presented, with examples of the ability to take affordable, and profitable action at most all levels, from the local, through national.